

Amendment and Response

Serial No.: 10/019,642

Confirmation No.: 1056

Filed: February 1, 2002

For: FERTILITY IMPAIRING VACCINE CONTAINING AVIAN ZONA PELLUCIDA PROTEIN AND
METHOD OF USE

Page 2 of 18

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (cancel)
2. (previously presented) The fertility impairing vaccine of claim 29 wherein the avian zona pellucida protein is a glycoprotein.
3. (previously presented) The fertility impairing vaccine of claim 29 wherein the avian zona pellucida protein is a naturally occurring protein.
4. (previously presented) The fertility impairing vaccine of claim 29 wherein the avian zona pellucida protein is a recombinant protein.
5. (previously presented) The fertility impairing vaccine of claim 29 wherein the avian zona pellucida protein is a chemically or enzymatically synthesized protein.
6. (cancel)
7. (previously presented) The fertility impairing vaccine of claim 29 wherein the immunological adjuvant comprises synthetic trehalose dicorynomycolate.
8. (previously presented) The fertility impairing vaccine of claim 29 squalene oil.

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**For: FERTILITY IMPAIRING VACCINE CONTAINING AVIAN ZONA PELLUCIDA PROTEIN AND
METHOD OF USE**

Page 3 of 18

9. (previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof and further comprising at least one immune cell epitope from a virus, bacterium or parasite.

10. (previously presented) The fertility impairing vaccine of claim 29 which is an immunosterilant vaccine.

11. (previously presented) The fertility impairing vaccine of claim 29 which is an immunocontraceptive vaccine.

12-16. (cancel)

17. (withdrawn/Previously presented) A method for impairing the fertility of an animal comprising administering to the animal a fertility impairing vaccine of claim 29 wherein the vaccine is administered in a manner and an amount effective to cause fertility impairment in the animal.

18. (withdrawn) The method of claim 17 wherein the vaccine causes temporary, reversible infertility in the animal.

19. (withdrawn) The method of claim 17 wherein the vaccine causes permanent, irreversible infertility in the animal.

20. (withdrawn) The method of claim 17 wherein the animal is a mammal.

21. (withdrawn) The method of claim 20 wherein the mammal is selected from the group consisting a horse, a deer, an elephant, a rat, a mouse, a rabbit, a ferret, a dog and a cat.

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For: FERTILITY IMPAIRING VACCINE CONTAINING AVIAN ZONA PELLUCIDA PROTEIN AND METHOD OF USE

Page 4 of 18

22. (withdrawn) The method of claim 21 wherein the animal is a dog.
23. (withdrawn) The method of claim 21 wherein the animal is a cat.
24. (withdrawn) The method of claim 17 wherein the animal is a bird.
25. (withdrawn/Previously presented) The method of claim 17 wherein the fertility impairing vaccine further comprises a porcine zona pellucida protein or an immunogenic fragment thereof.
26. (withdrawn/Previously presented) The method of claim 25 wherein the ratio (aZP:pZP) of avian zona pellucida protein (aZP) to porcine zona pellucida protein (pZP) is about 100:1 to about 1:100.
27. (withdrawn/Previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof and a porcine zona pellucida protein or an immunogenic fragment thereof.
28. (withdrawn/Previously presented) The fertility impairing vaccine of claim 27 wherein the ratio (aZP:pZP) of avian zona pellucida protein (aZP) to porcine zona pellucida protein (pZP) is about 100:1 to about 1:100.
29. (Previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof and an immunological adjuvant selected from the group consisting of aluminum hydroxide, Acemannan, permulum, synthetic trehalose dicorynomycolate, squalene oil, drakeol, vegetable oil, lecithin, phosphatidyl choline, and combinations thereof.

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Confirmation No.: 1056

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For: FERTILITY IMPAIRING VACCINE CONTAINING AVIAN ZONA PELLUCIDA PROTEIN AND METHOD OF USE

Page 5 of 18

30. (previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof wherein the avian zona pellucida protein or an immunogenic fragment thereof is conjugated to an immunogenic carrier protein.

31. (previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof and delivery vehicle.

32. (previously presented) The fertility impairing vaccine of claim 31 wherein the delivery vehicle is selected from the group consisting a microsphere-mediated delivery vehicle, liposome-mediated delivery vehicle, a microencapsulation delivery vehicle, a time-release delivery vehicle, and combinations thereof.

33. (previously presented) A fertility impairing vaccine comprising an avian zona pellucida protein or an immunogenic fragment thereof packaged for delivery through a dart or a bullet.

34. (previously presented) A fertility impairing vaccine comprising a 70 kD avian zona pellucida protein or an immunogenic fragment thereof.

35. (currently amended) [[A]] The fertility impairing vaccine of claim 29 comprising wherein the avian zona pellucida protein comprises a 40 kD avian zona pellucida protein or an immunogenic fragment thereof.

36. (currently amended) [[A]] The fertility impairing vaccine of claim 29 comprising wherein the avian zona pellucida protein comprises a 35 kD avian zona pellucida protein or an immunogenic fragment thereof.

Amendment and Response

Page 6 of 18

Serial No.: 10/019,642

Confirmation No.: 1056

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**For: FERTILITY IMPAIRING VACCINE CONTAINING AVIAN ZONA PELLUCIDA PROTEIN AND
METHOD OF USE**

37. (previously presented) A fertility impairing vaccine comprising two, but not three, of the following: a 40 kD avian zona pellucida protein or an immunogenic fragment thereof; a 35 kD avian zona pellucida protein or an immunogenic fragment thereof; and a 70 kD avian zona pellucida protein or an immunogenic fragment thereof.

38. (previously presented) A fertility impairing vaccine, wherein the vaccine comprises a 40 kD avian zona pellucida protein or an immunogenic fragment thereof, and a 35 kD avian zona pellucida protein or an immunogenic fragment thereof, and does not comprise a 70 kD avian zona pellucida protein or an immunogenic fragment thereof.

39. (previously presented) The fertility impairing vaccine of claim 9 wherein the immune cell epitope is a T cell epitope, a helper T cell epitope, or a B cell epitope from a parasite.